

REMARKS

This is in response to the Office Action mailed December 12, 2006. Applicants are appreciative for the recognized allowable subject matter. This amendment should obviate outstanding issues and make the remaining claims allowable.

A minor amendment has been made to independent claim 11 and 22 to correct a grammatical error. Specifically, the word “and” has been added to claims 11 and 22. It should be appreciated that this amendment constitutes a cosmetic change to the claims and is not intended to affect the scope of such claims. No new matter has been added via the current amendment.

Reconsideration of this application is respectfully requested in view of this response/amendment.

STATUS OF CLAIMS

Claims 1-35 are pending.

Claim 22 is allowed.

Claims 2-10, 12-21, 23-29, and 31-35 stand objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 1, 11, and 30 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. 6,684,223 (hereinafter “Ganesh”) and Oracle9i Database Administrator’s Guide Release 2 (9.2) Part Number A96521-01, pages 1-21, 2002 (hereinafter “Oracle”).

OVERVIEW OF CLAIMED INVENTION

The presently claimed invention provides for a system and method implementing a **shared memory device** (called **Coupling Facility**) that is used to **record indoubt transaction entries for each member of a database cluster**. The present invention's coupling facility communicates with the database cluster and a transaction manager and issues instructions to perform a ROLLBACK or COMMIT based upon the recorded indoubt transaction entries in a coupling facility list structure.

OBJECTION WITH RESPECT TO CLAIMS 23-29

On page 2 of the Office Action of 12/12/2006, the Examiner states in bullet point no. 5 that "**Claim 22 is allowed**" and further states on the same page in bullet point 6 that "Claims 2-10, 12-21, **23-29**, and 31-35 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims." Applicants wish to emphasize that **claim 22 is an independent claim**, which is currently allowed. Applicants also wish to emphasize that claims 23-29 depend from base claim 22.

Hence, Applicants respectfully submit that claims 23-29 should be allowable as they depend from an allowable claim (i.e., claim 22). Applicants, therefore, respectfully request the Examiner to withdraw the objections with respect to claims 23-29 and, further, request allowance thereof.

REJECTIONS UNDER 35 U.S.C. §103

Claims 1, 11, and 30 stand are rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. 6,684,223 (hereinafter “Ganesh”) and Oracle9i Database Administrator’s Guide Release 2 (9.2) Part Number A96521-01, pages 1-21, 2002 (hereinafter “Oracle”). To establish a prima facie case of obviousness under U.S.C. §103, three basic criteria must be met. First, there must be some **suggestion or motivation**, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, **to modify the reference or to combine reference teachings**. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) **must teach or suggest all the features of the rejected claim(s)**. Additionally, the teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure (In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991)). Applicants contend, as seen in the arguments above, that the Examiner, based on the office action of 12/12/2006 has failed to establish a prima facie case of obviousness under U.S.C. §103.

First, Applicants respectfully contend that the Examiner has failed to show, **with evidence**, why the Ganesh and Oracle references can be combined. The Examiner merely makes a comment on page 3 of the Office Action that “it would have been obvious to one of ordinary skill in the art at the time the invention was made” to have combined the methods of Ganesh and Oracle without an explanation of reasons/evidence as to why one of ordinary skill in the art would have been motivated to select the references and to combine them to render the claimed invention obvious.

The Examiner is reminded that, in order to establish a case of prima facie obviousness there must also be shown a motivation to combine the teachings of the cited references, namely Ganesh and Oracle. To that end, some suggestion of the desirability to combine the references must be found and demonstrated in the references. This burden cannot be satisfied by simply asserting that the modification would have been “well within the ordinary skill of the art.”

As the CAFC stresses for a §103 rejection to stand, the Examiner is required to show **with evidence** the motivation, suggestion or teaching of the desirability of making the specific combination at issue. That evidence is required to counter the powerful attraction of a hindsight-based obviousness analysis. See, for example, *In re Lee*, 277 F.3d 1338, 1343, 61 U.S.P.Q. 2d 1430, 1433 (Fed. Cir. 2002) (“Our case law makes clear that the best defense against the subtle but powerful attraction of a hindsight-based obviousness analysis is rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references”). It is respectfully submitted that this involves more than a mere bold assertion that it would be obvious to combine the cited references. With respect, the Examiner has failed to provide any evidence as to why one of ordinary skill in the art would be motivated to combine the teachings of Ganesh and Oracle. *In re Lee* requires that the record must state with particularity all the evidence and rationale on which the PTO relies for a rejection and sets out that it is necessary to explain the reasons one of ordinary skill in the art would have been motivated to select the references and to combine them to render the claimed invention obvious.

Under *Lee*, the PTO must state in writing the **evidence** on which it bases its rejection. With respect, the present office action falls short of this requirement.

Applicants have set forth below an argument as to even if the Ganesh and Oracle references were combined, it still would not teach or suggest the present invention.

The Ganesh reference describes a two-phase commit method and system wherein a coordinating database system examines log tracking data residing on the coordinating database system to determine whether a particular participating database system is prepared to commit, which reduces the number of messages transmitted between a coordinating database system and participating database systems.

The Oracle9i Database Administrator's Guide's chapter on "Managing Distributed Transactions" merely details how to manage and troubleshoot distributed transactions.

Independent claim 1 provides for a method for facilitating performance of 2-phase commit operations between transaction managers and resource managers in a **database cluster**, wherein the method comprises the steps of: recording indoubt transaction entries for each member of a database cluster via a shared memory device; and upon detecting failure of a transaction manager, and issuing instructions to perform a ROLLBACK or COMMIT based upon said recorded indoubt transaction entries in said shared memory device.

Claim 11 of the present invention provides a **coupling facility** recording indoubt transaction entries for **each member of a remote database system**, wherein the coupling facility comprises: a) a **coupling facility list structure recording indoubt entries associated with each**

member of said database system; b) an interface for communicating with said database system and a transaction manager, said interface issuing instructions to perform a ROLLBACK or COMMIT based upon said recorded indoubt transaction entries in said coupling facility list structure.

Claim 30 of the present invention provides for an article of manufacture comprising computer usable medium having computer readable program code embodied therein facilitating performance of 2-phase commit operations between transaction managers and resource managers in a database cluster, wherein the medium comprises: (a) computer readable program code recording indoubt transaction entries for each member of a database cluster via a **shared memory device**; and upon detecting failure of a transaction manager, (b) computer readable program code issuing instructions to perform a ROLLBACK or COMMIT based upon said **recorded indoubt transaction entries in said shared memory device.**

In the Office Action of 12/12/2006, with respect to independent claims 1, 11, and 30, the Examiner states that the Ganesh reference, in column2, lines 24-32 teach “a database cluster via a shared memory device”. Column 2, lines 24-32 is reproduced verbatim below:

“Coordinating database system 110 includes a log, such as log 112. The log 112 is used to record modifications made to the database system, and other events affecting the status of those modifications, such as commits. Log 112 contains a variety of log records. When these log records are first created, initially they are stored in volatile memory, and are soon stored permanently to non-

volatile storage (e.g. a non-volatile storage device such as a disk).

Once log records are written to non-volatile storage, the modifications and other events specified by the log records are referred to as being ‘persistent’.”

The above-referenced citation references figure 2, which is reproduced below:

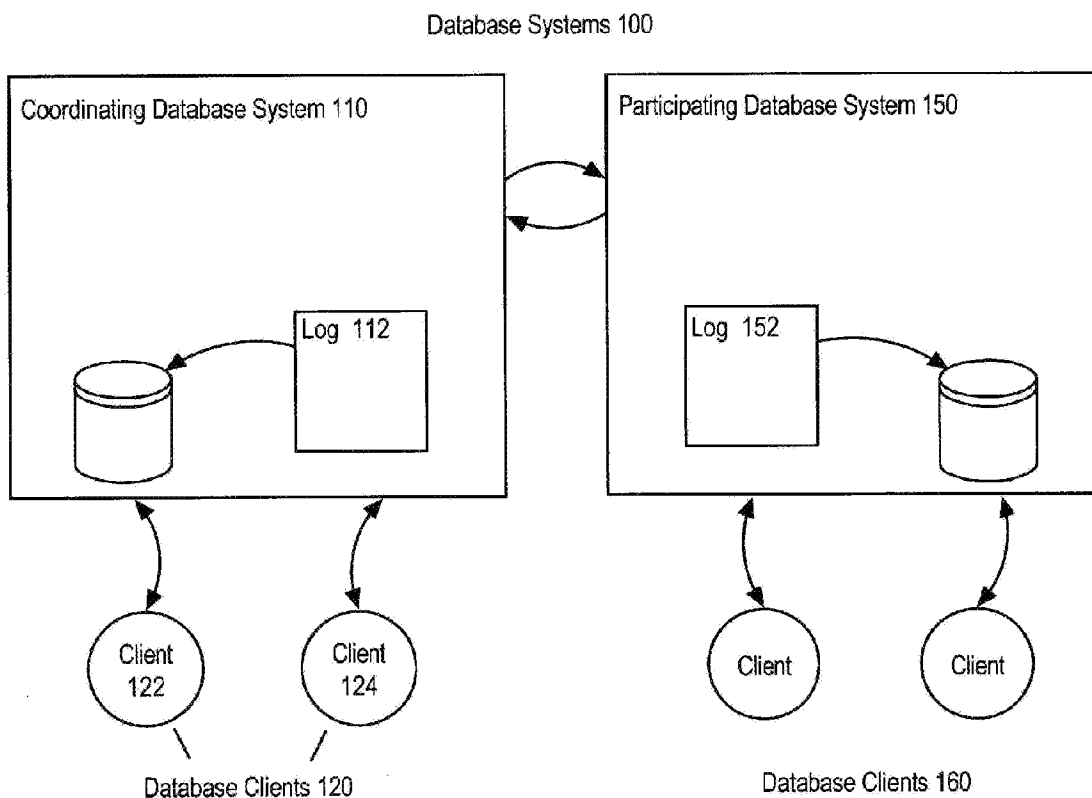


FIGURE 1 OF GANESH ET AL.

The Examiner’s citation in column 2 merely references “log 112” of “coordinate database system 110”, which is used to “record modifications made to the database system”. However, the Examiner is urged to review Figure 1 of Ganesh et al. (which is reproduced above), wherein **a separate log – “log 152” – is maintained for “preparation database system 150”**. For further

support, the Examiner is directed to column 3, lines 51-54, which specifically states that “At step 266, **participating database system 150 records the transition to the prepared state on log 152** (i.e., creating a log record recording the fact that the prepared state has been reached” (emphasis added). Hence, Applicants respectfully assert that Figure 1 of Ganesh et al., and Ganesh et al. in their entirety, fails to teach or suggest either “a **shared** memory device” or a “a coupling facility list structure recording indoubt entries **associated with each member of said database system**”. In fact, Ganesh et al. teach the opposite, by having **separate logs**, i.e., **log 112 and log 152**, for each of the databases, i.e., one for the coordinating database system and one for the participating database system.

The teachings of independent claims 1 and 30 specifically teach a “**database cluster**” and a “**shared memory device**” and independent claim 11 specifically teaches recording indoubt entries associated with **each member** of the database system in a **coupling facility list structure**. For clarification, the Examiner is directed to Figure 4a of the application-as-filed, which is reproduced below:

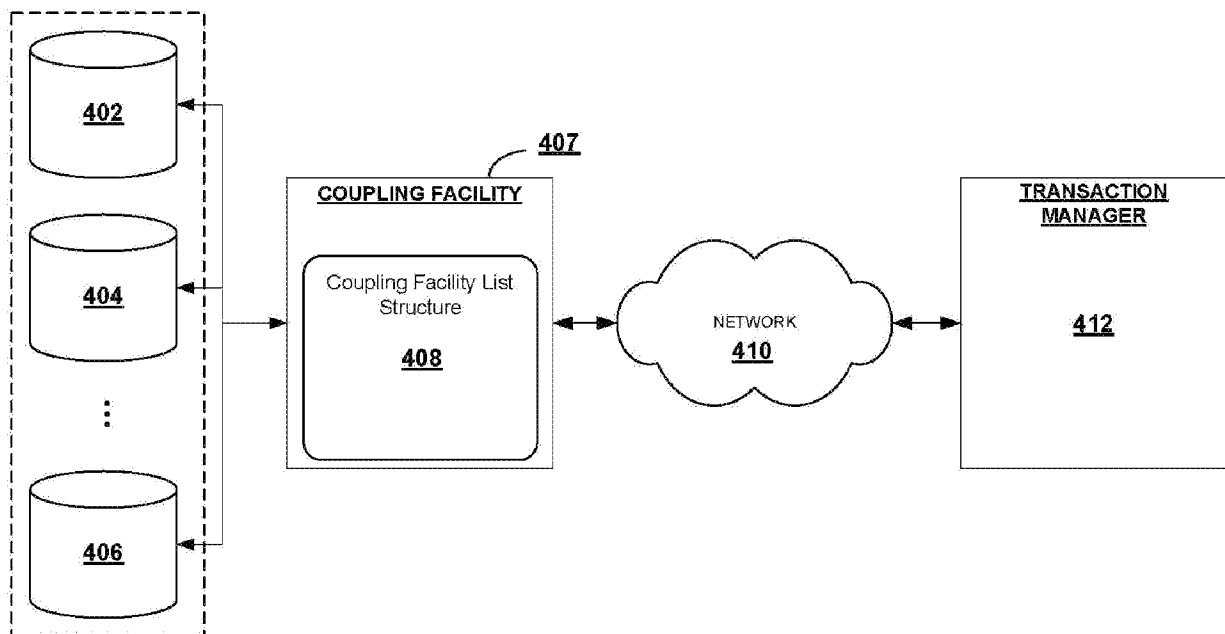


FIGURE 4A OF APPLICATION-AS-FILED

It can be seen from the above-reproduced Applicants' Figure 4A that the Coupling Facility or Shared Memory Device 407 is shared between members 402, 404, ..., 406 of a database cluster, a feature of Applicants' claims 1 and 30. It can also be seen from the above-reproduced Applicants' Figure 4A that a coupling facility list structure 408 records indoubt entries associated with each member (i.e., members 402, 404,...,406) of the database cluster, a feature of independent claim 11.

Such a "shared memory device" or "coupling facility list structure" recording indoubt entries with each member is neither taught nor suggested by the Ganesh et al. reference. Further, the secondary reference, Oracle, fails to show a "shared memory device" or "coupling facility list structure" recording indoubt entries

Applicants also submit that absent a showing of a “shared memory device” or a “coupling facility list structure”, it would be moot to argue that combination of Ganesh and Oracle teach the features of (1) “issuing instructions to perform COMMIT and ROLLBACK **based upon the recorded indoubt transaction entries in a shared memory device**” or (2) “issuing instructions to perform a ROLLBACK or COMMIT **based upon said recorded indoubt transactions entries in said coupling facility list structure**”.

Hence, at least for the above-set forth reasons above, independent claims 1, 11, and 30 are not rendered obvious by either Ganesh or the combination of Ganesh and Oracle.

If the Examiner still feels that the above features (i.e., a “**shared memory device**” recording indoubt transaction entries and a “coupling facility list structure recording indoubt transaction entries associated with **each member** of said system”) are taught by the Ganesh et al. reference or the Oracle reference, it is respectfully requested that the Examiner specifically point in accordance with the guidelines of the M.P.E.P. where in Ganesh or Oracle is such a teaching or suggestion provided.

Hence, applicants contend that the examiner has failed to establish a prima facie case for obviousness under 35 U.S.C. §103(a) with respect to claims 1, 11, and 30. Applicants, therefore, respectfully request the Examiner to withdraw the rejections with respect to claims 1, 11, and 30 and respectfully request allowance thereof.

SUMMARY

As has been detailed above, none of the references, cited or applied, provide for the specific claimed details of Applicants' presently claimed invention, nor renders them obvious. It is believed that this case is in condition for allowance and reconsideration thereof and early issuance is respectfully requested.

As this response has been timely filed, no request for extension of time or associated fee is required. However, the Commissioner is hereby authorized to charge any deficiencies in the fees provided to Deposit Account No. 09-0460.

If it is felt that an interview would expedite prosecution of this application, please do not hesitate to contact Applicants' representative at the below number.

Respectfully submitted,

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